

BUILDING RESILIENCE IN THE PACIFIC








How ADB is Addressing Climate Change
and Disaster Risks

- Cook Islands
- Federated States of Micronesia
- Fiji
- Kiribati
- Marshall Islands
- Nauru
- Niue
- Palau
- Papua New Guinea
- Samoa
- Solomon Islands
- Timor-Leste
- Tonga
- Tuvalu
- Vanuatu

ADB

Climate change and disaster risks in the Pacific are increasing.

The 15 Pacific developing member countries (DMCs) of the Asian Development Bank (ADB) are exposed to a wide range of worsening climate-related hazards, such as tropical cyclones, floods, droughts, storm surges, and sea level rise.¹ The region also faces geophysical hazards such as volcanic eruptions and earthquakes (see table below).

| PROJECTED FUTURE IMPACTS | COUNTRY EXAMPLES |
|---|---|
|  <p>Although the frequency of tropical cyclones may not increase, they are expected to become stronger and cause more damage in the coming decades.</p> | <p>Fiji. In 2016, Cyclone Winston killed 44 people and damaged or destroyed over 300,000 houses, as well as schools, businesses, and infrastructure. Total estimated damage was one-third of the country's gross domestic product (GDP).</p> |
|  <p>Many climate projections indicate that precipitation will increase in amount and intensity. Flood risk is increasing, especially in urban areas.</p> | <p>Solomon Islands. In 2014, heavy rains caused extensive flooding in Honiara. 22 people died in flooding along the city's river, 675 houses were destroyed, and 10,000 people were displaced. Total damage was estimated at over 9% of GDP.</p> |
|  <p>Some climate models are projecting more frequent and intense El Niño events, which could trigger more severe droughts.</p> | <p>Palau. An El Niño-related drought in the summer of 2016 led to severe water shortages, which contributed to a significant drop in visitor arrivals.</p> |
|  <p>Most people in ADB's Pacific DMCs live near the coast and are, therefore, exposed to coastal hazards such as storm surges and tsunamis.</p> | <p>Samoa. In 2009, the country was struck by a tsunami that killed 143 people. Over 12,000 people were affected by waves that inundated communities along the south coast of Upolu.</p> |
|  <p>The populations of low-lying atoll island nations like Kiribati, the Marshall Islands, and Tuvalu are extremely vulnerable to projected sea level rise.</p> | <p>Kiribati. The country's atolls rise to an average of only 1.8 meters above sea level. If the sea level continues to rise at its current rate, Kiribati could disappear by 2100.</p> |
|  <p>Home to over 100 volcanoes, the Pacific sits along the "Ring of Fire." Eruptions can cause rock falls, pyroclastic flows, and tsunamis.</p> | <p>Vanuatu. In 2017, an eruption of the Manaro Vouli volcano led to the evacuation of the entire island of Ambae. Its 11,000 residents were temporarily relocated to three neighboring islands.</p> |
|  <p>Pacific DMCs are located on or near a major fault between the Australian and Pacific tectonic plates, making the region seismically active and vulnerable to large earthquakes.</p> | <p>Papua New Guinea. In early 2018, a 7.5 magnitude earthquake hit the Highlands region. Over 500,000 people were impacted and more than 270,000 required immediate humanitarian assistance. Fatalities exceeded 100.</p> |

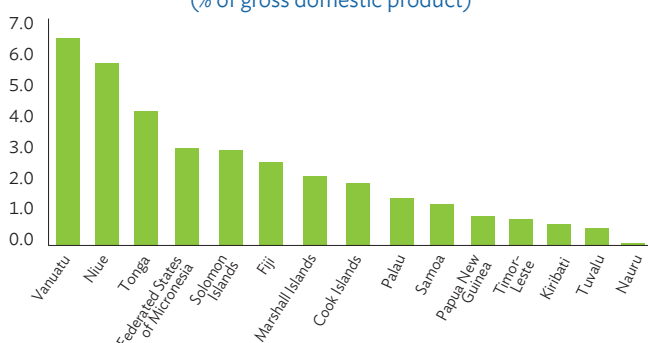
¹ The Cook Islands, the Federated States of Micronesia, Fiji, Kiribati, the Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Timor-Leste, Tonga, Tuvalu, and Vanuatu.

Pacific developing member countries are highly vulnerable to natural disasters.

Pacific DMCs share many sustainable development challenges. Their small size, isolation, narrow economic bases, limited resources, and dependence on trade make them highly vulnerable to climate change and natural disasters. With the exception of Papua New Guinea, Pacific DMCs are small island developing states (SIDS), and eight are fragile and conflict-affected situation (FCAS) countries.

Extreme events, such as strong tropical cyclones, can push governments into debt distress, businesses into insolvency, and individuals into extreme hardship. Vulnerability is greatest for the poorest populations, who live in small communities on remote outer islands. Women rely more on natural resources for their sustenance and livelihood, which makes them particularly vulnerable to climate extremes.

Estimated Annual Average Loss Due to Natural Disasters
(% of gross domestic product)



Source: Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI), Catastrophe Risk Assessment Methodology, 2013.

The economic impacts of natural disasters in the Pacific are severe. Pacific DMCs are among the highest-ranked countries in terms of average annual disaster losses scaled by GDP. A recent risk assessment estimated that Pacific island countries together suffer \$284 million (or nearly 2% in regional GDP) in economic losses from natural disasters annually. As shown in the figure to the left, Vanuatu, Niue, and Tonga have the highest losses, due in part to their higher exposure to natural hazards.

ADB is providing multifaceted support to its Pacific DMCs.

ADB's efforts to strengthen resilience to climate change and disasters in the Pacific are guided by five core principles:

- 1 Finance climate-resilient infrastructure.
- 2 Promote low-carbon development
- 3 Improve disaster risk reduction, response, and resilience.
- 4 Increase climate and disaster risk finance.
- 5 Strengthen country and regional capacities.



ADB's interventions support Pacific DMCs in implementing their Nationally Determined Contributions (NDCs) and Joint National Action Plans for Disaster Risk Management and Climate Change Adaptation (JNAPS). At the regional level, ADB's support is guided by the Framework for Resilient Development in the Pacific, (FRDP), which recognizes that resilience is central to development and emphasizes that responses must involve multiple sectors and stakeholders.

ADB's principles for climate change and disaster risk management in the Pacific

1. FINANCE CLIMATE-RESILIENT INFRASTRUCTURE

Pacific challenge. Across the Pacific region, there is an urgent need to build and replace infrastructure to ensure greater resilience to climate change and natural disasters. Much of the critical infrastructure in the region is at risk from future sea level rise, storm surge, flooding, and/or drought.

ADB's response

Throughout the Pacific region, ADB continues to strengthen resilience by “climate-proofing” infrastructure and building more sustainable communities.

In Kiribati, a proposed ADB project cofinanced by the Green Climate Fund involves the construction of a seawater desalination plant run on solar power. The plant will provide the entire population of South Tarawa with a climate resilient water supply, while an expanded water supply network will reduce leakages and ensure residents have access to clean water. ADB is also developing climate-resilient water supply and waste management systems in Fiji, Solomon Islands, Tonga, and Vanuatu.

In Nauru, ADB is developing a climate-resilient port that can operate year-round. The new port, cofinanced by the Green Climate Fund and the Government of Australia, will provide a much-needed lifeline for the 11,300 residents of this fragile and vulnerable island nation.

In Solomon Islands, ADB provided financing for bridges, stream crossings, and culverts to boost East Guadalcanal's connectivity with the rest of the country, while helping 39,000 residents better withstand the impact of climate change and more frequent natural disasters.

These projects are among a growing number of ADB investments that benefit from rigorous climate risk assessments (CRAs). ADB uses CRAs to determine climate risks and explore alternative approaches and designs, such as elevating roads and bridges, increasing drainage capacity, and drought-proofing water supplies. Since 2016, ADB has developed CRAs for nearly all of its Pacific projects in the transport and water sectors.



ADB-funded Kings Road project in the outskirts of Suva, Fiji.

2. IMPROVE DISASTER RISK REDUCTION, RESPONSE, AND RESILIENCE

Pacific challenge. Disaster risk presents one of the most serious threats to sustainable socioeconomic development in the Pacific. While disasters cannot be prevented, measures can be taken to help Pacific DMCs reduce their vulnerabilities and also recover faster and become more resilient in the wake of a disaster.

ADB's response

In the Pacific, ADB provides a range of financial products for disaster and emergency assistance, from initial disaster response to recovery and reconstruction.

In 2016, ADB introduced its first-ever post-disaster contingent credit line for the Cook Islands to provide quick disbursement of financing for early response, recovery, and reconstruction activities after a disaster occurs. Such ex ante financial assistance has since been expanded to four more Pacific DMCs—Palau, Samoa, Tonga, and Tuvalu—through ADB's regional contingent disaster response facility. The facility mobilized \$6 million in a matter of days to support recovery efforts in Tonga following Cyclone Gita. This facility is now being explored with other DMCs.

In addition, ADB provides post-disaster grants through the Asia-Pacific Disaster Response Fund. These grants can reach up to \$3 million for immediate humanitarian response and recovery.

3. PROMOTE LOW-CARBON DEVELOPMENT

Pacific challenge. Despite low greenhouse gas emissions, Pacific DMCs have ambitious plans to shift away from their traditional reliance on diesel to more renewable energy sources of power generation. As the cost of solar and wind power declines, Pacific DMCs are transforming their energy systems and improving access to more affordable electricity.

ADB's response

ADB has the largest portfolio of energy projects among development partners in the Pacific. Throughout the region, ADB is developing small-value renewable energy projects to reduce dependence on imported diesel-fueled electricity generation, thereby increasing energy security and reducing greenhouse gas emissions and local pollution.

In Tonga, ADB is helping ensure that the country generates 70% of its electricity from renewables by 2030. On the main island of Tongatapu, a project cofinanced by the Green Climate Fund and Government of Australia will increase battery energy storage to ensure that intermittent electricity generated from solar and wind power can be stored and used overnight without negatively affecting the grid system.

In Papua New Guinea, ADB is providing affordable, clean, and reliable power in provincial centers through the Town Electrification Investment Program. This investment program includes the construction of a small run-of-river hydropower plant with a preliminary capacity of 3 megawatts. And in the Federated States of Micronesia, ADB is supporting the construction of a wind farm and grid-connected solar panels on the island of Yap.

ADB is also preparing a guarantee program to attract independent power producers in renewable energy by guaranteeing utilities' offtake obligations under power purchase agreements.



In Fiji, Vanuatu, and most recently in Tonga, ADB disbursed such grants in the immediate aftermath of tropical cyclones Winston, Pam, and Gita. ADB also provided grants to Papua New Guinea after a destructive earthquake (2018), Vanuatu in the wake of volcanic eruptions on Ambae Island (2017), and the Marshall Islands in response to a severe drought (2016).

ADB also provides emergency assistance loans, which assist with the early phases of recovery and rehabilitation. In Fiji, for instance, ADB's initial post-disaster grant was supported with a \$50 million loan to help the government reconstruct schools and homes.

ADB is also taking action to reduce disaster losses in the Pacific by utilizing dedicated funding for disaster risk reduction (DRR). This DRR funding will support a number of ADB investment projects in the Pacific, helping ensure that necessary actions to build resilience are taken before disasters occur.



4. INCREASE CLIMATE AND DISASTER RISK FINANCE

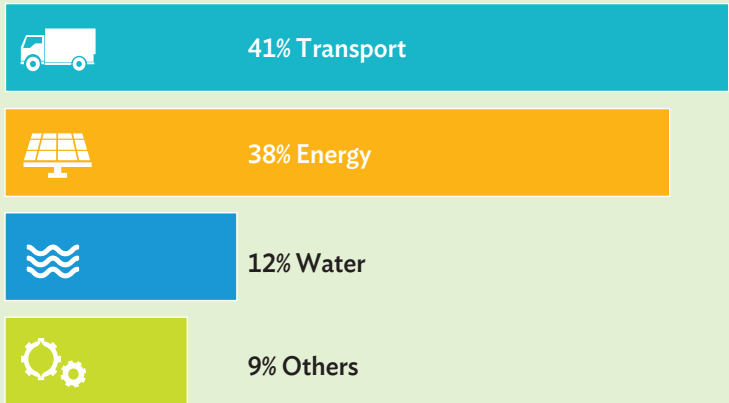
Pacific challenge. While Pacific DMCs have been successful in accessing climate finance, current amounts are not nearly enough to cover the expenditures needed to protect people and communities from the impacts of future climate change.

ADB's response

ADB is facilitating greater flows of climate finance into the region, with energy and transport as the leading two sectors.

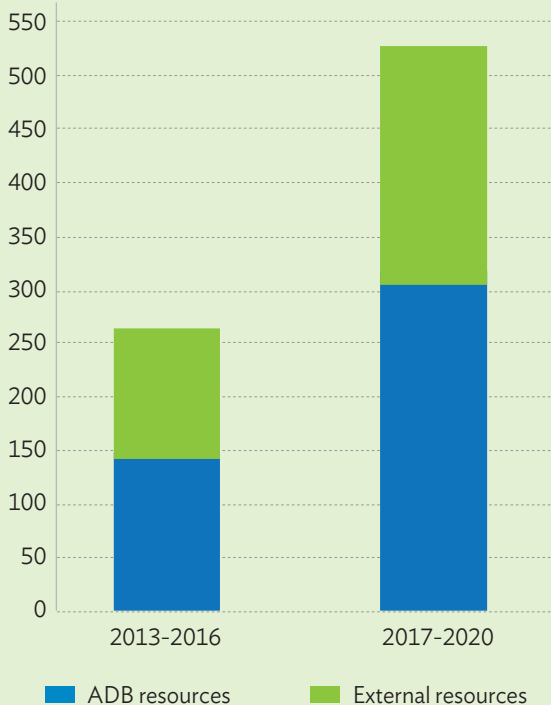
In 2016, the Pacific Department set a goal to mobilize more than \$500 million in climate finance from 2017 to 2020, double the amount secured in the previous 4 years. As shown in the figure below, the Pacific Department is on track to meet this target. In 2017 and 2018, climate finance from ADB's Pacific projects totaled \$235 million (\$155 million from ADB's internal resources), and greater amounts are projected for 2019 and 2020.

ADB Climate Financing in the Pacific (2013–2018)



Source: ADB.

ADB Climate Financing in the Pacific (\$ million)



Source: ADB.

Achieving this target requires mainstreaming climate change into the design and implementation of investment projects, thereby increasing the “climate component” of investments. Given the high climate risks and vulnerabilities of Pacific DMCs, nearly half of climate finance for ADB's projects in the Pacific will support climate change adaptation.

ADB will also use its internal resources to leverage increased levels of external climate finance. ADB is an accredited entity to all global climate funds and is also a partner with major Pacific cofinancers, including Australia, Japan, and New Zealand.



Children having fun in Timor-Leste.

5. STRENGTHEN COUNTRY AND REGIONAL CAPACITIES

Pacific challenge. In many Pacific DMCs, lack of capacity to address climate change and natural disaster risks is a central constraint. Building a robust understanding of available tools and resources is essential for planning for and responding to future impacts and disaster events.

ADB's response

ADB supports a range of policy and capacity development interventions to reduce climate change and disaster risks in Pacific DMCs, working with various partners throughout the region.

In 2017, ADB supported Fiji's presidency for the 23rd annual Conference of the Parties, and also helped Fiji consider options for more sustainable transport and expand insurance coverage for vulnerable households in the event of disasters.

Through its investment projects, ADB is helping integrate disaster risk considerations into land use planning and strengthening building standards and codes. For instance, as part of current efforts to upgrade the Alotau provincial wharf in Papua New Guinea (PNG), ADB has committed to working with the PNG Ports Corporation to develop new national standards for designing climate-resilient ports.

ADB will also help Pacific DMCs increase opportunities for private sector participation, including investment, risk insurance, and technology development and deployment. Such support will be in coordination with ADB's Private Sector Operations Department.

Another area of focus is addressing the linkages between gender and climate change. For instance, ADB conducted analysis on gender and social inclusion for an ongoing Climate Change and Disaster Risk Finance Assessment in Kiribati, an initiative of the Pacific Islands Forum Secretariat and the Pacific Community.

To help advance these and other policy and capacity building activities, ADB is developing new and strengthening its existing networks in the region. Perhaps most significantly, ADB is partnering with the newly created Regional Pacific Nationally Determined Contributions Hub, which will bring together key country focal points, regional organizations, development partners, civil society, and private sector organizations.



Women working in subsistence fishing in Papua New Guinea.

ADB Offices in the Pacific

ADB has 15 offices in the Pacific—2 regional offices, 2 resident missions, and 11 country offices.

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■ **On the cover:** Aerial shot of Aitutaki, Cook Islands.
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